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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/536,775	01/23/2006	Nigel Paul Schofield	M02B160	2847

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EXAMINER	
BOBISH, CHRISTOPHER S	

ART UNIT	PAPER NUMBER
3746	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/536,775	SCHOFIELD, NIGEL PAUL	
	Examiner	Art Unit	
	CHRISTOPHER BOBISH	3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 May 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 May 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *05/26/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 5, 6, 7 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breaux (US Patent No. 3,536,418) in view of Stones (US Patent No. 6,375,413 B1).

Breaux teaches:

From claim 1:

A vacuum pumping arrangement, **FIG. 1,** having a turbomolecular vacuum pumping means**, FIG. 1 (10) C. 1 Line 70**, having a motor, **FIG. 1 (20) C. 2 Lines 10-11,** and a drive shaft, **FIG. 1 (12) C. 1 Line 71,** an evacuation means, **FIG. 1 (33),** to evacuate the turbomolecular pump, **C. 2 Lines 30-35,**

Breaux does not teach a backing pumping mechanism, but Stones does.

Stones teaches:

limitations from claim 1, a backing mechanism, **FIG. 1 (1) C. 5 Lines 28-29;**

Stones further teaches:

limitations from claim 5, wherein the backing pumping mechanism comprises a regenerative mechanism, **C. 5 Lines 28-29;**

limitations from claims 6 and 15, a molecular drag mechanism, **FIG. 1 (2) C. 5 Lines 29-30;**

It would have been obvious to one having ordinary skill in the art of vacuum pumps at the time of the invention to combine the regenerative and molecular drag mechanisms taught by Stones with the turbomolecular pump taught by Breaux in order to create a pump capable of greater vacuums, C. 1 Lines 57-68 and C. 2 Lines 1-21;

Breaux and Stones teach and disclose the vacuum pump system from claim 1.

Breaux further teaches:

limitations from claim 7, an evacuation means for evacuating a vacuum pumping arrangement, **C. 2 Lines 30-35;**

Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breaux (US Patent No. 3,536,418) in view of Stones (US Patent No. 6,375,413 B1) as applied to claims 1, 5, 6, 7 and 15 above, and in further view of Abbel (US Patent No. 6,446,651 B1).

Breaux and Stones teach and disclose of the vacuum pumping arrangement of claim 1.

Neither Breaux nor Stones teach a processing assembly with a pump, but Abbel does.

Abbel teaches:

limitations from claim 2 and 3, a processing assembly, **FIG. 1, C. 1 Lines 13-22 teach a use for the system of FIG. 1 in industry and research to provide a vacuum to create specific atmospheric conditions, examiner believes a semiconductor processing assembly would read on this disclosure,** including a pump**, FIG. 1 (4) C. 2 Lines 55-56,** forming an evacuation means**, C. 2 Lines 62-65, Abbel teaches a vacuum pump (4) used as both a fore-vacuum pump to a turbomolecular vacuum pump (3) and to provide vacuum to a load lock chamber, examiner believes a load lock chamber reads on a gate chamber (2);**

It would have been obvious to one having ordinary skill in the art of vacuum pumps at the time of the invention to combine the assembly and pump taught by Abbel with the arrangement of Breaux as modified by Stones, to create an arrangement using fewer parts, reducing costs and space requirements, C. 1 Lines 40-44.

Claims 2, 3, 4, 7, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breaux (US Patent No. 3,536,418) in view of Stones (US Patent No. 6,375,413 B1) as applied to claims 1, 5, 6, 7 and 15 above, and in further view of Olsen (US Patent No. 4,577,465).

Breaux and Stones teach and disclose of the vacuum pumping arrangement of claim 1.

Neither Breaux nor Stones teach a processing assembly with an ejector pump, but Olsen does.

Olsen teaches:

limitations from claim 2 and 3, a processing assembly**, FIG. 1 C. 1 Lines 17-20**, forming an evacuation means, wherein a pump, **FIG. 1 (38),** used as an evacuation means is also used for a load lock chamber, **FIG. 1 (16)**, **C. 5 Lines 40-60;**

limitations from claims 4 and 16, the evacuation means comprises an ejector pump, **FIG. 1 (38) C. 5 Lines 47-48;**

It would have been obvious to one having ordinary skill in the art of vacuum pumps at the time of the invention to use an ejector pump as taught by Olsen to evacuate the system taught by Breaux and modified by Stones in order to avoid contamination from an oil lubricated pump, C. 2 Lines 20-30;

limitations from claim 7, wherein the evacuation means is for evacuating a vacuum pumping arrangement, **C. 5 Lines 40-60;**

It would have been obvious to one having ordinary skill in the art of vacuum pumps at the time of the invention to combine the assembly and pump taught by Olsen with the arrangement of Breaux as modified by Stones, to create an arrangement using fewer parts, reducing costs and space requirements;

Claims 8-9, 13, 14 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breaux (US Patent No. 3,536,418) in view of Stones (US Patent No. 6,375,413 B1).

Breaux teaches:

From claim 8:

A vacuum pumping arrangement, **FIG. 1,** having a turbomolecular vacuum pumping means, **FIG. 1 (10) C. 1 Line 70**, having a motor, **FIG. 1 (20) C. 2 Lines 10-11,** and a drive shaft, **FIG. 1 (12) C. 1 Line 71,** a method comprising operating an evacuation means, **FIG. 1 (33),** to evacuate the turbomolecular pump to a predetermined pressure, **C. 2 Lines 30-35,** and operating a motor to rotate a drive shaft, **C. 2 Lines 33-35**;

Breaux does not teach a backing pumping mechanism, but Stones does.

Stones teaches:

limitations from claim 8, a backing mechanism, **FIG. 1 (1) C. 5 Lines 28-29;**

It would have been obvious to one having ordinary skill in the art of vacuum pumps at the time of the invention to combine the backing mechanisms taught by Stones with the turbomolecular pump taught by Breaux in order to create a pump capable of greater vacuums, C. 1 Lines 57-68 and C. 2 Lines 1-21;

Breaux and Stones teach and disclose the vacuum pump and method from claim 8.

Breaux further teaches:

limitations from claim 9, wherein the motor **(20)** rotates the drive shaft **(12)** when the predetermined pressure has been obtained, **C. 2 Lines 30-35**;

limitations from claim 13, wherein the vacuum pumping arrangement, **FIG. 1,** is evacuated to the predetermined pressure, **C. 2 Lines 30-35**;

limitations from claims 14 and 17, wherein the predetermined pressure is 500mbar or less, **C. 2 Lines 32-33 set a range of 10^{-3} to 10^{-5} torr for the original pressure, these values convert to a value lower the 500 mbar**;

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Breaux (US Patent No. 3,536,418) in view of Stones (US Patent No. 6,375,413 B1) as applied to claims 8, 9, 13, 14 and 17 above, and in further view of Arai et al (US Patent No. 6,474,949 B1).

Breaux and Stones teach and disclose of the vacuum pumping arrangement of claim 8.

Breaux teaches starting a motor **(20)** while running an evacuation means, **C. 2 Lines 30-34;**

Neither Breaux nor Stones teach limiting the torque of a motor during startup, but Arai does.

Arai teaches:

limitations from claim 10, limiting the torque of a motor **(40), Arai discloses controlling the speed of the motor, it would be obvious that speed and torque are closely related,** to avoid an overloaded state, **C. 1 Lines 60-65 and C. 4 Lines 5-21;**

It would have been obvious to one having ordinary skill in the art of vacuum pumps at the time of the invention to combine the pump monitoring method as taught by Arai with the operating method taught by Breaux and modified by Stones in order to create a more stable pumping arrangement.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Breaux (US Patent No. 3,536,418) in view of Stones (US Patent No. 6,375,413 B1) as applied to claims 8, 9, 10, 13, 14 and 17 above, and in further view of Abbel (US Patent No. 6,446,651 B1).

Breaux and Stones teach and disclose of the vacuum pumping arrangement of claim 8.

Neither Breaux nor Stones teach a processing assembly with a pump, but Abbel does.

Abbel teaches:

limitations from claim 11, a processing assembly, **FIG. 1, C. 1 Lines 13-22 teach a use for the system of FIG. 1 in industry and research to provide a vacuum to create specific atmospheric conditions, examiner believes a semiconductor processing assembly would read on this disclosure,** including a pump, **FIG. 1 (4) C. 2 Lines 55-56,** forming an evacuation means, **C. 2 Lines 62-65, Abbel teaches a vacuum used as both a fore-vacuum pump to a turbomolecular vacuum pump and to provide vacuum to a gate chamber;**

It would have been obvious to one having ordinary skill in the art of vacuum pumps at the time of the invention to combine the assembly and pump taught by Abbel with the arrangement and method of Breaux as modified by Stones, to create an arrangement using fewer parts, reducing costs and space requirements, C. 1 Lines 40-44.

Claims 11, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breaux (US Patent No. 3,536,418) in view of Stones (US Patent No. 6,375,413 B1) as applied to claims 8, 9, 10, 13, 14 and 17 above, and in further view of Olsen (US Patent No. 4,577,465).

Breaux and Stones teach and disclose of the vacuum pumping arrangement of claim 8.

Neither Breaux nor Stones teach a processing assembly with an ejector pump, but Olsen does.

Olsen teaches:

limitations from claim 11, a processing assembly, **FIG. 1 C. 1 Lines 17-20**, having an evacuation means, wherein a pump **(38)** used as an evacuation means is also used to evacuate a vacuum pumping means, **C. 5 Lines 40-60;**

limitations from claim 13, wherein the evacuation means is for evacuating a vacuum pumping arrangement, **C. 5 Lines 40-60;**

It would have been obvious to one having ordinary skill in the art of vacuum pumps at the time of the invention to combine the assembly and pump taught by Olsen with the arrangement of Breaux as modified by Stones, to create an arrangement using fewer parts, reducing costs and space requirements;

limitations from claims 12, the evacuation means comprises an ejector pump, **FIG. 1 (38) C. 47-48, for evacuating a vacuum pumping means;**

It would have been obvious to one having ordinary skill in the art of vacuum pumps at the time of the invention to use an ejector pump as taught by Olsen to evacuate the system taught by Breaux and modified by Stones in order to avoid contamination from an oil lubricated pump, C. 2 Lines 20-30;

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER BOBISH whose telephone number is (571)270-5289. The examiner can normally be reached on Monday through Thursday, 7:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on (571)272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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